

This is shown by the accompanying graph, which refers to an experiment with 300 mm. acetone in a 250 c.c. silica bulb at 460° C. Such a decrease cannot be due to a simple delay in the development of chains. It must be due to some cause such as an adsorption effect or to initial polymerization of ketene formed from the acetone. This possibility being recognized, the phenomenon observed by Allen, and in the modified form by ourselves, is too uncertain to weigh against other evidence, and on too small a scale to have influenced any of the rate determinations made at the higher temperatures.

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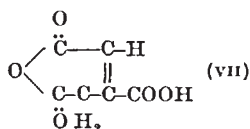
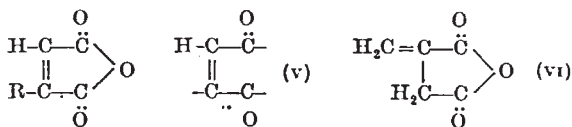
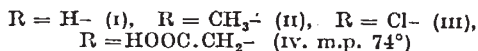
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¹ *J. Amer. Chem. Soc.*, 58, 1052 (1936).

A Colour Reaction of Maleic Anhydride, *p*-Benzoquinone and their Partially Substituted Derivatives

WHEN a trace of maleic anhydride (I) is added at room temperature to a colourless solution of triphenylphosphine (P Ph₃) in chloroform or benzene (for example, 1 drop of 1 per cent maleic anhydride solution to 1 c.c. of a 1 per cent solution of triphenylphosphine), a permanent orange-red colour is produced immediately.

The same effect is observed with monosubstituted derivatives of maleic anhydride, for example, citraconic (II), monochloromaleic (III), and *cis*-aconitic (IV) anhydrides:



On the other hand, no colour is developed with disubstituted derivatives, for example, dimethyl-, diphenyl- and diacetoxy-maleic anhydride. Maleic acid, its dimethyl ester, succinic anhydride and *trans*-aconitic anhydride (VII. m.p. 134–135° C.) fail to give this reaction; but the phenomenon is shown by *p*-benzoquinone and those of its derivatives in which not all the hydrogen atoms are substituted, for example, 2 : 6-dichloroquinone and thymoquinone (2-methyl-5-isopropyl-*p*-benzoquinone).

It seems, so far as it could be ascertained, that this colour reaction is characteristic of the grouping (v) when forming a part of the above-mentioned ring systems. The observation that the solution of itaconic anhydride (VI) gave the colour reaction positive can be explained by the known fact that in solution it isomerizes to (II).

Amongst the various substances investigated which gave no colour reaction, we may mention anthraquinone, 2 : 3-dichloronaphthoquinone, phenanthraquinone and 2 : 6-dimethylpyrone.

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Difference in Odour of *d*-, *l*- and *dl*-Derivatives of Amino- and Bisamino-Methylenecamphors

It is well known that optically active isomers, despite the fact that they are identical in structure, differ from one another in those physical properties which are of the directional (vectorial) nature, such as, for example, direction of rotation of the plane of polarized light, unsymmetrical distribution of the hemihedral facets in their crystal forms, etc. The magnitude of these vectorial properties is, however, identical for the enantiomorphous forms. The optically active forms differ also in other respects, namely, in their action on micro-organisms, enzymes and in their physiological behaviour towards higher organisms. In 1886 Piutti¹ observed that *d*-asparagine had a sweet taste, whereas the naturally occurring *l*-asparagine was insipid. Cushny² found that *l*-hyoscyamine was twice as powerful in paralysing the vagus as the racemic form, atropine, while the *d*-form was twenty times weaker in this action. One of the most striking examples of different physiological activity recently observed is vitamin C or ascorbic acid³: the dextro-rotatory acid is active, the laevo-rotatory form being physiologically inactive.

These differences in the physiological action of the optical antimers and their racemic forms are also associated with other properties, such as odour. J. von Braun⁴ has observed a few cases in which he noted differences in odours not only among the optically active forms, but also in their inactive isomerides. The object of this communication is to record differences in the intensity of odour of several new derivatives of amino- and bisamino-methylenecamphors in their *d*-, *l*- and *dl*-forms. The odour was

Name of the compound	Order of intensity of odour	Number of observers
5-nitro- <i>o</i> -toluidinomethylenecamphors. (I)	<i>l</i> > <i>dl</i> > <i>d</i>	10
3-nitro- <i>o</i> -toluidinomethylenecamphors. (II)	<i>l</i> > <i>dl</i> > <i>d</i>	13
2 : 5-toluylene bisamino methylenecamphors. (III)	<i>l</i> > <i>dl</i> > <i>d</i>	11
2 : 3-toluylene bisamino methylenecamphors. (IV)	<i>l</i> > <i>dl</i> > <i>d</i>	11